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to our workers to a minimum and saved millions."

(Editor's note: This article is from a Department of Energy news release issued April 30.)



Bill Guyton, LMITCO vice president of Applied Engineering and Development Laboratory, presented royalty checks to Integrated Earth Sciences principal investigators James (Buck) Sisson, Ph.D., and Joel Hubbell at a ceremony at the INEEL Research Center.

Royalties for researchers

Commercialized technologies trace underground contaminants

by Michael Sinclair
for the Star

Two researchers in the INEEL's Integrated Earth Sciences group are happy recipients of the first royalty checks resulting from the commercialization of technologies they developed.

The technologies, which monitor the movement of pollutants in the vadose zone -- a region that extends from the earth's surface to the water table -- could make the world a better place in which to live.

In an April 21 ceremony at the INEEL Research Center, Bill Guyton, LMITCO vice president of Applied Engineering and Development Laboratory, presented royalty checks to Integrated Earth Sciences principal investigators James (Buck) Sisson, Ph.D., and Joel Hubbell. Guyton thanked the researchers, and the Technology Transfer Office for pulling the package together.

"This is really about our people," Guyton said. "We count on people to step forward and these two did."

Buck and Joel have worked hard at perfecting this innovative science. This is just the first of many royalty payments they will receive as the technology continues to move into the environmental marketplace through our commercialization partner, In-Situ, Inc., of Laramie, Wyoming."

Hubbell and Sisson were joined at the ceremony in the IRC by Bob Snelling, director, Environmental and Life Sciences, AEDL; Jeff Mobley, director of Licensing and Business Development; and Tom Harrison, account executive, Technology Transfer Office, who negotiated the licensing agreement with In-Situ.

Royalties for useful technology

"Royalty payments are a way for PIs to share in the fruits of their research when it becomes commercially viable, while moving the INEEL towards its goal of commercializing useful technology at a faster pace," said Guyton.

INEEL scientists and engineers are beneficiaries of the innovative management contract negotiated between Lockheed Martin Idaho Technologies Company and the U.S. Department of Energy under which PIs (principal investigators) receive 30 percent of royalties flowing to the INEEL from licensing agreements for the commercialization of the technology they developed.

In accepting the royalty payments, Sisson and Hubbell acknowledged the contribution of Harrison in securing the licensing agreement.

"We really appreciate the know-how and effort Tom brought to the licensing negotiations with In-Situ," said Sisson. "He worked closely with Joel and me to groom the technology for market, then he found potential licensees, arranged meetings, attended to endless details and ultimately cemented an agreement that benefits the INEEL, In-Situ and its customers -- and us."

Technology tracks contaminants

Vadose zone research evolved from work funded by the Department of Energy to monitor and manage buried radioactive and mixed waste at the INEEL's Radioactive Waste Management Complex.

"That investment has paid off in better environmental monitoring capabilities at the INEEL," said Bob Snelling. "It continues to pay off in an emerging family of commercial products that will help protect the environment while returning licensing royalties to the lab."

The technology developed by Sisson and Hubbell helps geoscientists estimate the direction and rate at which water-borne contaminants move under the ground. Until recently, attempts to monitor "wetting front" movement has been made using devices known as tensiometers. But even the best of these are hampered by depth limitations (they don't work at depths greater than 10-12 feet) and crude precision.

"As a consequence," said Hubbell, "in areas like the RWMC, it wasn't possible to accurately estimate how long it would take contaminants stored at the surface to reach the Snake River aquifer -- about 600 feet below land surface -- if a catastrophic flooding event occurred."

Five years ago, soil physicist Sisson and hydrologist Hubbell combined their expertise and talents to conceive, develop and patent several downhole instruments capable of measuring soil moisture content at virtually any depth and with a precision not previously possible. With a network of instrumentation and monitoring wells using these technologies deployed at the INEEL, they are collecting data to help predict how quickly contaminants might migrate from the RMWC to the Snake River.

"The vadose zone technologies our researchers developed usher in a new era for monitoring waste disposal sites, safeguarding drinking water supplies and controlling agricultural irrigation systems," said Mobley. "The exclusive licensing agreement will make this advanced technology widely available to industry, federal agencies and state and federal regulators through new products from In-Situ, a leader in environmental monitoring."

Commercial potential

In-Situ develops and manufactures a comprehensive family of data acquisition systems, pressure transducers, and water quality monitors for in-field environmental hydrological measurements. The 20-year-old company markets its products nationally and internationally.

"We anticipate that the enhanced capabilities of the INEEL instruments will not only open up new applications, but also will eventually supersede off-the-shelf devices presently in use," says Chester McKee, In-Situ's chairman of the board. "The INEEL technologies we are transferring to commercial products have capabilities unmatched by any competing technologies to characterize the unsaturated environment above the aquifer."

According to developers Sisson and Hubbell, vadose zone monitoring is critical for a wide range of applications, which include ensuring that contaminants at waste disposal sites are not transported to aquifers and drinking water supplies, controlling irrigation for agriculture (crops) and turf (golf courses and lawns), avalanche control, monitoring the stability of slopes, roads, railbeds and dams, optimizing heap leaching operations at mines, and assessing recharge and snow-melt infiltration for water resource management.

The licensing agreement covers six vadose zone technologies developed under the INEEL's Laboratory Directed Research and Development Program.

In-Situ will introduce new products based on INEEL technology periodically for the next three years, commencing with the Advanced Tensiometer in June. In-Situ will make royalty payments to the INEEL for the use of the technology.

Getting the most from

Lotus Notes

Creating distribution lists

A new capability has been added to Lotus Notes that will let users create organizational distribution lists within their own address book.

Users who need to send messages to all managers or employees in a specific branch, directorate or department will find creating a distribution list (group) in Lotus Notes very helpful.

To create an organizational distribution list (group), follow these steps:.